International Journal of Science and Healthcare Research
Vol. 9; Issue: 2; April-June 2024
Website: ijshr.com
Case Report *ISSN: 2455-7587*

Herpes Zoster Infection in A Case of Nephrotic Syndrome (On Alternate Day Prednisolone Therapy) - A Case Report

Dr. Tamasi Choudhury[1], Dr. Tapas Bera[2], Dr. Koustuv Chowdhury[3]

[1]Post Graduate Trainee, Department of Pharmacology, R. G. Kar Medical College and Hospital, Kolkata, India.
[2]MD Pharmacology, Professor and Head, Department of Pharmacology, R. G. Kar Medical College and Hospital, Kolkata, India.
[3]DCH, MD Pharmacology, Assistant Professor, Department of Pharmacology, R. G. Kar Medical College and Hospital, Kolkata, India.

Corresponding Author: Dr. Tamasi Choudhury

DOI: https://doi.org/10.52403/ijshr.20240219

ABSTRACT

Herpes Zoster infection is caused by Varicella Zoster virus. Its characteristic feature is the appearance of unilateral clustered vesicles on an erythematous base. The vesicles heal within two weeks from appearance of vesicles.
The symptoms of Nephrotic Syndrome include severe proteinuria, edema, hypoalbuminemia and hyperlipidemia. Minimal Change Nephrotic Syndrome is the most prevalent type of nephrotic syndrome in children, for which prednisolone is the preferred medication. Administration of prolonged corticosteroid causes decreased cell mediated immunity which causes immunosuppression and therefore chance of infection increases.
Herpes zoster infection is usually a self-limiting disease. It is usually diagnosed clinically on the basis of characteristic appearance of the rash. Treatment is mainly by administration of oral acyclovir for 7 days. Severe illness may require hospitalization for intravenous acyclovir. In individuals with nephrotic syndrome on corticosteroids or other immunosuppressive medications, complication arising from varicella infections can be life-threatening.

KEYWORDS: Herpes zoster, Nephrotic syndrome, Minimal Change Nephrotic Syndrome, Prednisolone, Acyclovir, Cell mediated immunity

INTRODUCTION

Herpes zoster is a viral disease caused by varicella zoster virus, also known as shingles. It is characterized by appearance of grouped vesicles in a segmental distribution on an erythematous base. Vesicles rapidly turns pustular and crust. Crusts heal in about two weeks.[1] It occurs mainly in immunocompromised patient. Sometimes herpes infection precedes chicken pox infection.
Massive proteinuria, hyperlipidemia, edema, and hypoalbuminemia are the characteristic feature of nephrotic syndrome. Occasionally elevated urea levels and microscopic haematuria are found.[2]
Minimal Change Nephrotic Syndrome is the most prevalent kind of nephrotic syndrome in children, and prednisolone is the recommended medication for this condition. Long term steroid therapy (prednisolone) causes immunocompromised state which leads to opportunistic infections.

CASE PRESENTATION

A 4 years old male child was on alternate day prednisolone for first episode of nephrotic syndrome. Suddenly the child developed unilateral vesicular eruption on the right upper chest and back. The lesion was a

conglomerated vesicular eruption associated with low grade fever. The child was irritable, most probably due to pain. Past history of varicella infection was not properly elicited. First dose of varicella vaccine taken at age of 18 months. The child was administered acyclovir syrup and paracetamol syrup and the lesion resolved after 2 weeks. The alternate day steroid not stopped during the course of the therapy.

Picture showing A case of Herpes zoster infection in nephrotic syndrome child on alternate day prednisolone therapy.

PATHOPHYSIOLOGY

- In nephrotic syndrome cellular immunity is diminished, there is low serum IgG level and occasional abnormalities of T lymphocyte cell subset.[3] Patients show Th2 polarization and also perturbation in the T regulatory/Th17 axis.[2]
- Steroids on prolonged therapy suppress the necessary protective response to infection and inflammation. It suppress the cell-mediated immunity where T-cells are primarily involved. It acts by inhibiting genes that code for cytokines IL-1,IL-2,IL-3,IL-4,IL-5,IL-6,IL-8 and IFN-γ. Less cytokine production reduces T-cell proliferation.[4]

DIFFERENTIAL DIAGNOSIS

i) Herpes simplex virus.
ii) Impetigo.
iii) Contact dermatitis.
iv) Insect bites.
v) Drug eruptions.

DISCUSSION

Nephrotic Syndrome is an immunosuppressed state. Administration of corticosteroid (prednisolone) makes it more immunosuppressive and therefore more prone to developing infections.

Herpes zoster infection in patients of nephrotic syndrome is an uncommon condition. Complications of herpes zoster may be life-threatening in patients with nephrotic syndrome receiving corticosteroids or other immunosuppressive drugs.

CONCLUSION

Usually, a herpes zoster infection resolves on its own. Herpes zoster is typically diagnosed clinically based on the distinctive appearance of rash. The primary treatment involves taking acyclovir orally for seven days. Acyclovir may need to be administered intravenously in cases of severe illness.

Declaration by Authors
Acknowledgement: None
Source of Funding: None
Conflict of Interest: The authors declare no conflict of interest.

REFERENCES

1. Khanna N. Illustrated Synopsis of Dermatology and Sexually Transmitted Diseases. 5th edn. New Delhi: Elsevier ; 2016. p286-300.
2. Paul VK, Bagga A. Ghai Essential Pediatrics. 9th edn. New Delhi: CBS Publishers & Distributors; 2019. p460-503.
3. Bagga A, Srivastava RN. Pediatric Nephrology. 5th edn. New Delhi: Jaypee Brothers Medical Publishers; 2011. p195-234.
4. Sharma HL, Sharma KK. Sharma & Sharma's Principles of Pharmacology. 4th edn. Hyderabad: Paras Medical Publisher; 2023. p568-583.

How to cite this article: Tamasi Choudhury, Tapas Bera, Koustuv Chowdhury. Herpes zoster infection in a case of nephrotic syndrome (on alternate day prednisolone therapy) – a case report. *International Journal of Science & Healthcare Research.* 2024; 9(2): 133-134. DOI: *https://doi.org/10.52403/ijshr.20240219*

******